DOCUMENT RESUME

ED 442 986 CE 080 423

TITLE	Competency Based Training. NCVER Research Forum (Adelaide, Australia, November 10, 1999).
INSTITUTION	National Centre for Vocational Education Research, Leabrook (Australia).
PUB DATE	1999-00-00
NOTE	38p.; Photographs of presenters may not photocopy well.
AVAILABLE FROM	For full text: http://www.ncver.edu.au/research/papers/downloads/CBT.pdf.
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Competency Based Education; Developed Nations; *Educational Change; Educational Research; Foreign Countries; *Job Training; Needs Assessment; *Outcomes of Education; *Performance Based Assessment; Prior Learning; *Staff Development; Teacher Responsibility; Teacher Role; Vocational Education
IDENTIFIERS	*Australia

ABSTRACT

This publication reports on a forum on competency based training (CBT) research in Australia. Section 1 contains biographies of presenters and panel members. Section 2 presents an overview of the research and highlights key findings. Summaries follow of each of the five key projects. "The CBT Decade: Teaching for Flexibility and Adaptability" (Stephen Billett) examines the impact of CBT in the VET (vocational education and training) sector. "The Workplace Perspective" (Dianne Mulcahy) evaluates the extent to which CBT meets stakeholders' requirements. "The Staff Development Perspective" (Tom Lowrie) examines CBT's impact on the role and responsibilities of instructors across the VET sector. "Making a Difference? How CBT Has Changed Teaching and Learning" (Erica Smith) explores the impact of CBT and recognition of prior learning on teaching and learning in VET. "Assessing in a CBT Format" (Andrea Bateman) addresses the validity and reliability of two forms of assessment and examines their relationship to competency-based assessment (CBA) in VET. "Not Just Falling over the Line? A Snapshot of CBA" (Barbara Bloch) examines how well CBA is meeting the needs, preferences, and expectations of stakeholders in the assessment process. Each summary has these components: background, key findings, implications for teachers and trainers, implications for policy and provision, and three key issues. Section 3 is an annotated listing of 15 other research projects and reports on CBT. (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 442 986

NCVER Research Forum © NCVER 1999

Competency based training

The purpose of this forum 2

The presenters and panel members 3

What the research has said about
Competency-based training 6

An overview of the research presented at this forum
*Stephen Billett - The CBT decade: Teaching for flexibility and adaptability
*Dianne Mulcahy - The workplace perspective
*Tom Lowrie - The staff development perspective
*Erica Smith - Making a difference? How competency-based training has changed teaching and learning
*Andrea Bateman - Assessing in a competency-based training format
*Barbara Bloch - Not just falling over the line? A snap shot of competency-based assessment

Some other research and reports
on competency-based training 33

*These publications are available from NCVER

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL IN
MICROFICHE ONLY HAS BEEN GRANTED BY

S. Hayman

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

2B

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

CE 080 423

BEST COPY AVAILABLE

THE PURPOSE OF THIS FORUM

Most people have little or no time to digest lengthy and complex reports. However, forums such as this represent a way of bringing researchers and the users of research together to hear what research is saying, its implications and how the findings can be used to improve vocational education and training in Australia.

One of the real difficulties is getting the message of research out to potential users — particularly those providing training.

This series of forums therefore aims to:

- Bring researchers together with those who could and/or do use the outcomes of research in order to hear about it first hand.
- Provide an opportunity for people to meet, network and exchange information and ideas and consider solutions to the issues at hand.
- Identify and address key issues arising from the research.

"We try to keep the numbers at research forums limited and to maximise the opportunity for people to meet, interact, discuss, provide feedback and propose future directions"

BEST COPY AVAILABLE

THE PRESENTERS AND PANEL MEMBERS

Introduction

Dr Andy Smith, General Manager, Research & Evaluation
NCVER Ltd

Facilitator

Stewart Mitchell,
Mitchell Consultancy Services

Presenters

Ms Andrea Bateman, Consultant, Training & Assessment, University of Ballarat
Biography: Andrea Bateman is the foundation manager of the Ballarat Assessment Centre, The University of Ballarat. She is also a Training Recognition Consultant and auditor for the Office of Training and Further Education in Victoria. Her previous research includes assessment systems development and the development of Training Packages for CREATE, the Rural Training Council of Australia and the National Assessors and Workplace Trainers Body.

Dr Stephen Billett, Senior Lecturer Griffith University, School of Vocational, Technology and Arts Education
Biography: Stephen has worked in the Queensland VET system in teaching, administration, professional development and policy development roles. During this time, he was involved in the reforms such as award restructuring and training reform, including the implementation of CBT. Since moving to Griffith University he has researched learning and learning required for performance in the work place.

BEST COPY AVAILABLE

Ms Barbara Bloch, Project Manager, Centre for Vocational Education Assessment, Northern Sydney Institute
Biography: Since March 1995 Barbara has been employed as a Project Manager with TAFE NSW's Vocational Education and Assessment Centre. Her major responsibilities include managing research projects and/or product development in the area of competency-based training and assessment, particularly focussing on work-based learning and assessment. For six years, Barbara has been involved in either writing or managing a number of products on aspects of competency-based training and assessment.

Dr Tom Lowrie, Lecturer in Education, Charles Sturt University, School of Education
Biography: Tom Lowrie is a lecturer in the School of Education at Charles Sturt University. During the past three years he has been involved in two research projects that have investigated the impact competency-based training approaches have had on the VET sector. A range of research techniques including case studies, focus-group interviews and questionnaires have been used to gather data for the projects. Some of the research from these grants has been disseminated in journal articles and conference proceedings in both Australia and the USA.

Dr Dianne Mulcahy, Senior Lecturer, Department of Vocational Education & Training, University of Melbourne
Biography: Dianne is a Senior Lecturer in the Department of Vocational Education and Training at the University of Melbourne. She has published widely on various aspects of competency-based training. In 1998, she co-led a major research project whose purpose was to evaluate the contribution that CBT has made to outcomes in VET, most particularly the extent to which it has met the requirements of stakeholders and provided an improved base of skills at work. This work is being reported at the forum today.

Ms Erica Smith, Senior Research Fellow University of South Australia, Centre for Research in Education Equity & Work
Biography: Erica has been researching the impact of CBT since 1994, as the manager of two national projects and a team member in two further national studies. She also has experience of CBT as a TAFE teacher at the time of CBT's initial implementation and as a lecturer in VET teacher-training courses both at Charles Sturt University and now at the University of South Australia. In this latter role she has learned from her students about their experiences using CBT in their teaching and training.

Panel Members

Assoc. Professor Roger Harris, Director, Centre for Research in Education, Equity and Work, University of South Australia
Biography: As far back as 1985 and 1987, Roger published two reports through the TAFE National Centre for R&D on a three-year evaluation of CBT in the (then) Croydon Park College of TAFE. Since then, he has evaluated a national, DEET-funded project on CBT professional development (A Tale of Two Centres, 1993), co-authored a book on CBT (Between a Rock and a Whirlpool, 1995) and evaluated two years of the South Australian AVTS professional development programs (1995, 1996). Currently, he is involved in an NREC-funded research project on the changing role of staff development for VET teachers.

Prof. Andrew Strickland, Centre for Research in Education, Equity and Work, University of South Australia
Biography: Andrew Strickland is currently Adjunct Professor in the Centre for Research in Education, Equity and Work and the Hawke Institute at the University of South Australia He has occupied a number of senior public sector management positions in his career in both South Australia and the Commonwealth. He has been Executive Director of the Standards and Curriculum Council and General Manager, Australian National Training Authority. He has held academic positions in Universities in Australia.

Dr Josie Misko, Research Fellow, NCVER Ltd
Biography: Josie is a research fellow at NCVER and has worked in the area of VET research and evaluation for nearly 7 years. She has also had extensive experience in education and training in compulsory, post-compulsory and tertiary educational institutions, and in industry. She has written and researched in the areas of flexible delivery, student outcomes, transfer of knowledge, work-place training and assessment, VET in secondary schools, the cancellations of apprenticeships and traineeships, competency-based training and assessment processes, and transition pathways. She has also recently completed a review of CBT research, and is presently involved in an evaluation of fully-on-the- job traineeships.

BEST COPY AVAILABLE

WHAT THE RESEARCH HAS SAID ABOUT COMPETENCY-BASED TRAINING

An Overview

One of the most significant initiatives of the training reform agenda has been the promotion and introduction of competency-based approaches to vocational education and training, and its assessment.

The approach has been underpinned by the development and endorsement of competency standards in a wide range of industries and occupations.

Despite the magnitude of the initiative and the funds expended on it there has been little systematic evaluation and critique of competency-based training.

The former ANTA Research Advisory Council commissioned a study entitled *"Making a difference? How competency-based training has changed teaching and learning"*. Erica Smith's paper in this kit provides a symposis of this project.

An outline of the projects being considered today

Five projects in the national VET research and evaluation program, administered by NCVER, have examined:

- *the impact of CBT in the VET sector over the past decade.* This has been investigated holistically in two states (Queensland and Victoria) in terms of the development and implementation of curriculum, judgements about student's knowledge and its influence in the role of VET instructors. This project was conducted by teams based at both Griffith and Monash Universities. It has produced a report named *"The CBT decade: Teaching for flexibility and adaptability"*. Its authors are Stephen Billett, Charlie McKavanagh, Fred Bevan, Lawrence Angus, Terri Seddon, John Gough, Sharon Hayes and Ian Robertston.

- *the extent to which competency-based training is meeting the requirement of various stakeholders* – particularly those in workplaces and contributing to the quality of learning and working life. This project was conducted by a national team co-ordinated by Dianne Mulcahy and Pauline James from the Department of Vocational Education and Training at the University of Melbourne. The report is entitled *"Evaluating the contribution of competency-based training: An enterprise perspective"*.

- *how VET teaching staff and trainees have learnt to do competency-based training*. The project sought to discover the most effective ways of learning the skills and processes involved. It also aimed to provide an effective model for staff development in competency-based training. It was co-ordinated by Tom Lowrie, Erica Smith and Doug Hill from the Group for Research in Employment and Training at Charles Sturt University. The report is entitled *"Competency-based training: A staff development perspective"*.

- *the ways in which competency-based assessment has contributed to VET in Australia.* It examined how well, comparatively, competency-based assessment is meeting the needs, preferences and expectations of various stakeholders in the assessment process. The evaluation process provided some indicators for improvement in competency-based assessment policy and practice. It was conducted by the Vocational Education and Assessment Centre based at Crows Nest College of TAFE, part of the Northern Sydney Insititute, in NSW. The report written by Barbara Bloch and Michelle Dickson is entitled *"Not just falling over the line: A snapshot of competency-based assessment"*. In addition, a "Review of Research" by Andrea Bateman and Shelley Gillis entitled *"Assessing in VET: Issues of reliability and validity"* complements this study and provides a set of practical guidelines to enhance both the validity and reliability of assessment processes which can be built into planning, conducting and reviewing assessments.

Other work and publications

NCVER has commissioned one of its *Research at a glance* series of publications on the topic of CBT and its implementation in Australia. It will be published as soon as possible. Participants in this workshop will receive a copy as soon as it is available.

In addition, a Review of research written by Josie Misko will be released shortly. It is entitled *"Competency-based training: Review of research"*.

Another paper in the kit provides a consolidated bibliography of some other key references on competency-based training research.

Some key findings from the research

The key points arising from this research, which are drawn from the draft *Research at a glance* on CBT in Australia, are that:

- CBT has provided a bridge between the industry clients and the providers of vocational education and training. Competency standards have been an enduring means of articulating industry training requirements thus increasing the relevant and job specificity of vocational education and training efforts.

- CBT has significant support from Australian industry with employers, human resource managers, training managers, supervisors and Industry Training Advisory Boards all expressing satisfaction with CBT.

- CBT has been an effective means of giving more prominence to work-based learning and providing a means of formalising this learning in the workplace with the achievement of qualifications. It has increased Australia's skill pool through enabling those involved in CBT to acquire Australian Qualification Framework (AQF) credentials.

- CBT has been particularly successful in providing technical, operational and trade skills through training not only based on national industry standards but also more specific enterprise standards.

- CBT is widely available in most industry sectors in Australia, as evidenced through the almost complete coverage of industry sectors by endorsed national industry standards or enterprise standards.

- While evidence at a system level is scarce on the extent to which training courses and programs being delivered are based on competency standards and fully in a CBT format that which is available suggest this has grown significantly through the 1990s.

- CBT seems particularly effective for imparting procedural knowledge and routine problem-solving skills making it well-suited for technical skill acquisition. It is not as well suited nor does it pay as much attention to conceptual and experiential knowledge.

- CBT may have been less successful in developing flexibility, adaptability and capacities to innovate, all features seen as necessary for a workforce that will be competitive in a fast-changing, global marketplace.

- CBT is seen by some to be problematic in respect of its capacity to develop transferable skills in learners, although this can be significantly effected by the ability of experienced teachers using extended pedagogies to add to CBT.

- CBT is viewed more positively by teachers and trainers from non-TAFE providers than those from TAFE providers. Teachers and trainers who predominantly teach lower level AQF awards are more likely to be teaching these in a CBT format than those teaching Diplomas.

- CBT is perceived amongst some VET teachers and trainers to have resulted in a reduction in professional autonomy through the mandating of industry competency standards and a concomitant narrowing of learning experiences as well as a fragmentation of cumulative educational experiences and learning.

- Professional and staff development to support the introduction of CBT for teachers and trainers is perceived by many to have been inadequate, and continuing needs for professional development are not being fully met.

- CBT assessment continues to be disputed, especially the lack of graded assessment in much competency-based training, but also the validity of CBT assessment in the various modes used by teachers and trainers. There seems to be a growing practice of extending assessment to include underpinning knowledge, skills, attitudes and ethics to achieve a more holistic and less fragmented assessment in CBT contexts.

Summaries of each of the 5 key projects are provided on the next few pages.

Stephen Billett

'The CBT decade: Teaching for flexibility and adaptability'

Background to the research

This project aimed to identify how CBT contributed to the development of adaptability and flexibility in VET students in the decade from 1989 to 1999. Three subprojects were used to identified CBT's contributions in terms of: (i) curriculum; (ii) assessment and (iii) the role of instructors. Data were gathered from respondents (teachers, enterprises, industry and students) involved in vocational education provision for two industries (Metals and Hospitality) in both metropolitan and non-metropolitan sites in two states (Victoria and Queensland).

Key findings in general

- CBT itself was identified as contributing little to the promotion of adaptability and flexibility.
- The contributions of the: (i) broader VET reform movement and (ii) instructional and curriculum practices that existed prior to the introduction of CBT were more significant to the development of an adaptable and flexible workforce than CBT itself.

Contributions of CBT itself

- CBT has helped to make the VET system more outward looking. Staff sought more advice from employers and practitioners to enhance the relevance of what was taught.
- Adoption of accreditation and registration processes encouraged teachers and trainers to seek and listen to external advice and therefore maintain the currency of their skills, and the courses in which they teach. This contributes to the currency of the content and relevance of VET courses.

Contributions of the broader reform movement

- Increased interactions between providers and enterprises resulted in clearer goals and relevant content for courses.
- Increased opportunities to engage in workplace experiences increased students' potential to develop transferable knowledge for the workplace.
- Self-paced and text-based learning experiences pressed capable learners into higher orders of learning.

BEST COPY AVAILABLE

- Broadening of teachers' engagement with industry through market-based reforms assisted teachers' currency as curriculum makers and instructors.
- Greater emphasis on individualised learning resulted in meeting some learners' needs.

Contributions of existing practice

- Teachers' work in addressing students' needs, tailoring curriculum experiences and direct instruction secured positive outcomes for learners.
- Teachers helped to overcome some of the limitations of self-paced and text-based instructional activities.
- Teachers made links for the students between the classroom and the workplace, thereby enhancing the prospect of learning transfer.
- Teachers' expertise in both content and pedagogy is valued by learners and assists the development of the kinds of knowledge required for flexibility and adaptability.
- Instructional practices such as group work, simulated workplace tasks and problem-solving activities are likely to develop transferable knowledge.

Consistently, the quality of educational encounters was reported as determining whether adaptability and flexibility are realised in students. It seems that group-activities, individualised learning, resource-based activities, project work and teacher guided experiences, as well as combinations of classroom and workplace–based experiences, are likely to deliver adaptability and flexibility. However, it is in *combination* that such experiences are at their most potent.

It is the effective qualities of the 'enacted curriculum' (that is, curriculum as it is implemented), something managed best by teachers with appropriate pedagogical knowledge and skills, that is probably most central to the quality of learning and the prospect of securing outcomes desired by industry, enterprise and individuals.

CBT, flexibility and adaptability

The key antagonism between CBT and the development of adaptability and flexibility is vested in CBT's focus on outcomes, rather than processes. This distinction raises concerns about its educational orientation and practice. This antagonism shows itself in the following ways:

- National standards based upon measurable performance de-emphasises the very processes that make workplace performances possible and inform future performance (e.g. skillfullness and adaptability);
- The centralised development and nature of these standards has not accommodated local enterprises and individuals having particular performance requirements;
- The imposition of national curriculum prescriptions upon the training system and its clients was associated with mandation rather than developing teachers' and others' commitment;
- Approaches to instruction likely to secure skillfulness were being down played by the need for flexibility in delivery, and learning that focuses on the attainment of measurable performance; and
- Mandated assessment processes failed to address the qualities associated with adaptability and flexibility. Absence of moderation processes fails to facilitate reliability.

Implications for teachers and trainers

A broader and more legitimate role is required for teachers to develop skillfulness in learners – the 'effective curriculum'. This role likely includes:

- Curriculum developmental tasks associated with determining the detail of intents (objectives) and content at the local level in consultation with local enterprises and practitioners
- Identifying, selecting, organising, mediating and combining learning experiences for VET students (this includes structured workplace components).
- Developing and maintaining relationships with enterprises, employees and individuals to secure mutual benefits of understanding and reconciling needs and the continuous monitoring and improvement of VET programs.

Implications for policy and provision

- A clear delineation between what should be specified centrally (e.g. aims, goals, recommended content and methods) and what needs to be negotiated locally (e.g. objectives, content, learners' experiences)

- Accreditation processes that reflect this delineation and place as much emphasis on the quality of learning experiences and desired outcomes.

- A curriculum development model that is embedded in practice rather than centralised and remote from it; one focussed as much on the effective enactment of curriculum as the 'intended curriculum'.

- Restricting the use of behavioural measures to performance that is routine and measurable. Encouraging the use of process approaches to educational goals and instruction.

- Championing the significance and richness of vocational knowledge

3 key issues

Role of teacher
- How should their professional practice be best managed and developed further?
- What should be the scope of teachers' roles in developing students' skillfulness?
- What balance should there be between teachers' discretion and external sources of advice and guidance?

Nature of instruction
- What instructional procedures need to be adopted to develop transferable knowledge in students?
- How should the appropriateness of these procedures be identified, selected, combined, structured and organised?

Nature of relationships
- In what ways can mature relationships best be developed among employees, employers and vocational education?
- How can the needs of industry, enterprises and students be reconciled in the development of vocational education provisions?

Dianne Mulcahy

'The workplace perspective'

Background to the research

The purpose of the project was to evaluate the contribution that CBT has made to outcomes in VET, most particularly the extent to which has met the requirements of stakeholders and provided an improved base of skills at work. Supported by a national team of researchers, the evaluation involved conducting approximately two hundred telephone interviews with training managers and eight intensive case studies of CBT programs in enterprises throughout Australia. The enterprises accessed for the evaluation were drawn from four industry sectors – Services, Manufacturing, Construction, and Agriculture, Forestry and Fishing – these sectors being selected because of their contrasting characteristics and the potential they provided for examining CBT in a range of different contexts.

Key findings in general

Benefits of CBT to enterprises

Overall, CBT provides various practical benefits to enterprises including:

- *learning and assessing on-the-job*: 'CBT means we can do it all right here'
- *relevant and specific skills*: 'The bottom line is ... more relevance with competency-based training. ... You're learning skills and you are going to become competent in the tasks and focussed on that task versus all the theory side'
- *specified standards*: '(CBT) takes the guesswork out of training'
- *uniform outcomes*: 'Standardises classes and instructors (to) all (the) same standard and same approach .... Good for customers'
- *recognised training*: 'The biggest bonus is being able to use CBT to recognise the skills people have developed through working with the company for years and years'
- *workforce accountability and workplace management*: '(CBT ensures) a greater accountability of individuals to perform, as skills have been assessed and therefore management can expect that level of skill'

The competency-based approach: driving ideas

- Two broad views of competency are evident in enterprises: a 'tasks' view which emphasises *skills required by the job* and an 'integrated' view which emphasises the *contexts in which the job is done*. The tasks view of competency tends to prevail in enterprises, CBT being commonly conceived as 'specific skills for specific jobs'.

- Two broad models of competency-based education and training operate in enterprises, an *outcomes-based model* and a *process-based model*. The outcomes-

based model where outcomes are defined as given tends to predominate in enterprises: '(CBT) takes the guesswork out of training'.

Impact of CBT on knowledge, skills, attitudes

- Defined as 'practical', a 'hands-on do program', CBT is effective in providing operational, technical and trade skills. It is less effective in providing generic skills, for example, communication skills, contingency skills, cultural understanding: '(CBT is) useful for skills development but not always effective when attitudinal/behavioural change is required eg. a cultural shift'.
- Procedural knowledge and capacities for routine problem-solving are developed very effectively using CBT. Conceptual, tacit and experiential knowledge are given less attention, for example, in the Agricultural, Forestry and Fishing sector: 'CBT supplements home-based training but is not a substitute (for it). ... CBT does not provide trainees with the confidence of those who learn via home-based training. ... a family member often knows how it (farm machinery) works before they are old enough to drive it and so finds developing the machinery skills not overpowering, not near as frightening'.
- Dispositional factors (values, attitudes) underpinning skill and knowledge processes are problematic with respect to CBT: 'Some competencies in Human Services are difficult to quantify (eg. attitudes, ethics, values) so (CBT) gets put in the too hard basket'. 'CBT assesses competency but not attitude. However, attitude is 50 per cent of the job'.

Impact on teachers and trainers

- CBT impacts differently on different teachers and trainers. Inexperienced teachers appreciate the benchmarks and guidelines provided by CBT. Experienced teachers tend to rely on other resources such as professional expertise for program development and delivery.

Shortfalls in CBT: adding 'learning value'

- Experienced teachers and trainers play a transformational role in CBT. They add value to CBT, in various ways, for example, they 'backfill' those areas that appear to receive less attention (eg. conceptual knowledge, attitudes, values). Thus, they supplement the curriculum as laid down and employ a variety of pedagogical approaches that include reflection upon current practices, dialogue, problem-solving through the use of workplace scenarios, coaching, self-directed learning etc.

- close mutual relationships between providers and enterprises also add value to CBT. They secure provision that meets both educational and enterprise goals. CBT is most effective when it is delivered on-site by experienced teachers and trainers who 'broker' the boundaries between industry and education. Workplace personnel who engage in this brokerage are also critical to the success of CBT eg. some employers and training managers sponsor links between industry training and community learning and development. Like experienced teachers and trainers, they also add 'learning value' to CBT.

Implications for role of teachers and trainers

- VET teachers and trainers have a rapidly *expanding role*, a role that requires skills of various kinds – brokerage, consultancy, research, career counselling – and knowledge of various areas – the global economy, the changing world of work, organisational development and change, organisational culture, technological change, context curriculum, and pedagogies appropriate to the interrelationship of working and learning.

- Given that experienced teachers and trainers play a transformational role in CBT, maintenance and deployment of *specialist expertise* in curriculum and pedagogy is crucial. The research highlights the significance of the professional knowledge of teachers and trainers in, for example, facilitating transfer of knowledge and skill through various interactional processes.

Implications for policy and provision

- *Outcomes-based CBT*: the dominance of the *outcomes-based model* of VET where outcomes are defined as given raises concerns about educational practice and the capacity of training to prepare workers and learners to innovate and influence or shape the direction of change. Recognition could be given to the idea that different models of VET exist – different designs for vocational education and training. Designs that provide for the new requirements of work – project work, teamwork, contract management – and increase learning capacity in workplaces and the community at large may need to be considered in VET.

- *Processes of training provision*: teaching and learning processes have a significant role in 'extra-capacity CBT'. Teachers and trainers play a significant role in mediating competencies and negotiating the relationship between competency standards and learning processes. This mediation and negotiation involves, most importantly, facilitating transfer of knowledge through various interactional processes (eg. group work, project work, self-directed learning, community delivery). Sound pedagogy in VET will be of increasing importance, highlighting the need for programs of professional development for teachers and trainers.

- *Structures of training provision*: meaningful partnerships between stakeholders are emphasised in high value CBT. Further attention could be given to the significance of close, mutual relationships between enterprises and providers in securing education and training provision that meets both educational and enterprise goals.

3 key issues

Three issues arising from the research which the VET sector needs to address in order for CBT to progress and meet the challenges ahead concern:

1. the *changing world of work* and the need for *knowledgeable skill*: the research data indicate an over-emphasis on a particular type of competence – technical competence or 'specific skills for specific jobs'. If work is (to be) organised around knowledge and information products, and if knowledge and information are largely collectively produced, workers will require not only specific skills but also generic skills and generic skills of a high-order (eg. contingency skills, innovating skills, leadership skills).

2. ***the foundational role of learning in vocational education and training***: the biggest challenge for the VET sector in relation to CBT lies in increasing its capacity for learning, learning that goes beyond achieving pre-set outcomes or goals. The research data indicate that where trainees engage in anticipatory learning – learning that emphasises rehearsing outcomes and asking questions like: 'What if ... ' – more comprehensive types of problem-solving, as well as processes of problem-setting, are achieved.

3. *the foundational role of the expert practitioner in competence development*: the outcomes-based model of VET presupposes teachers and trainers who can interpret these outcomes and turn them into complete curriculum. The research data indicate that expert practitioners have a leading role in competence development and a transformational role in CBT. Unlike 'novice' teachers and trainers, who tend to construct competency training as a predominantly technical procedure ('plug in and play'), expert practitioners bring social and cultural processes to bear. Models of education and training responsive to the new needs of work and work-related learning are relevant here. Expert teachers and trainers (and expert workplace personnel) tend to be aware of these models and able to apply them effectively.

Tom Lowrie

'The staff development perspective'

Background

The investigation examined the impact CBT has had on the role and responsibilities of instructors across the VET sector. The following five research questions were investigated in the study:

- What is the quality and nature of CBT instruction in a range of providers across Australian Qualification Framework (AQF) levels, industry areas and geographical locations?
- To what extent are levels of understanding of CBT by instructors in the VET sector common across a range of locations?
- How have instructors adapted their practice to accommodate competency-based training, and how have new practices evolved?
- What are some of the staff development issues present in CBT?
- What type of staff development model can be applied to instructors in the VET sector when introducing an innovation like CBT?

A range of techniques were used to evaluate the extent to which competency-based approaches had influenced, or changed, the role of instructors' across the sector. These techniques included: (a) a nation-wide survey of instructors; (b) a detailed investigation of six VET providers who utilise CBT; and (c) two focus groups with staff development personnel and new instructors.

Key findings

From an analysis of this survey data it appears that:

- CBT is perceived to be well understood by instructors across the VET sector
- the degree of acceptance of CBT is moderately high in most cases but is dependent on the field of study and the extent to which CBT was seen as appropriate to that field
- practitioners were more satisfied with their level of understanding of CBT than with aspects of their practice (for example, assessment on demand and RPL)
- the introduction of Training Packages has caused instructors to revert to the kind of concerns initially encountered when faced with CBT. They consider that they need to know more about Training Packages and have yet to gain experience in using them in practice
- instructors concerns have moved away from their understandings of principles that underpin CBT to a focus on issues related to teaching/training and the administration of this form of training

BEST COPY AVAILABLE

- there are some statistically significant differences in the survey responses of instructors when variables including type of provider, location of provider, AQF level of courses, and nature of students involved, are taken into account
- differences between TAFE and non-TAFE instructors were common in a number of areas.

From an analysis of the survey data, case study and focus group sites:

- There appears to be some evidence of a belief that there should be a shift of onus for staff development from the provider or State training system to the individual.
- Practitioners in TAFE providers expect their employer to provide sufficient staff development activities to keep them abreast of changes, which affect their teaching.
- Non-TAFE providers tend to expect staff to shoulder most of the responsibility themselves.
- Staff development needs vary between full and part-time teachers; between types of provider; and between permanent and contract staff.
- Staff who teach a few hours as an adjunct to another job present particular staff development challenges.
- No assumptions can be made about teachers' understanding of innovations.
- The introduction of CBT to new teachers is problematic.
- The use of CBT with different groups of students and in different types of providers needs to vary and this has staff development implications.
- The way in which new teachers first learn about CBT is important and shapes their attitude towards it.
- There is a strong belief that the quality of VET teaching is being downgraded with CBT; and that the role of teachers is being denigrated.
- Staff development in teachers' particular area of expertise is as important as staff development in teaching.
- Action learning methods for staff development has had limited participation and as yet unproven worth.
- Training Package staff development needs careful planning.
- Views of staff development personnel at provider level and at State level may differ markedly.

Implications for the role of teachers/trainers

It is likely that no one model of professional development can explain the individual's propensity to engage constructively with top-down change (which might include opposing it as well as accepting it) or to engage in staff development activities associated with it. Each individual VET teacher is also part of a peer group that influences his or her attitudes and practices. Nevertheless, it was apparent that a range of factors affected an individual's engagement in staff development associated with top-down change.

These factors included:

- Departmental culture;
- Type of VET provider;
- Industry area;
- Preferred learning style;
- Nature and level of initial teacher training;
- The teacher's view about the top-down change (approval vr disapproval);
- Availability and timing of staff development activities;
- Teacher's professional or trade background; and
- Career stage.

Implications for policy and provision

It was apparent that staff development initiatives and negotiation should be conducted at and between national and state bodies providers, department/faculty and individual instructor levels across the sector. Those who manage the provision of training need to understand the new policy, how the policy is to be achieved and the desired outcomes. They also need to see clearly the implications for the way in which they manage and support the learning needs of all those involved in the change. For this reason those responsible for training and development should be represented at the management level.

Those involved at the industry/curriculum area cannot work in isolation from either the instructors or the managers at the provider level. In this research it was found that there were many cases where those responsible for one aspect of the implementation of CBT were not fully informed of the needs or constraints of others affected by their decisions.

A staff development model should involve consultation within and between all levels in an institute to provide for appropriate communication and feedback. The case studies from this study, in particular, support the view that trust is built through adequate consultation and negotiation and opportunity to consider emerging issues as they arise. This then seems to be a key feature of successful change and must be incorporated into the management of an innovation.

3 key issues

1. Although teachers/trainers identified assessment as being an important component of CBT, many individuals did not use assessment techniques to influence and modify their teaching programs. How could assessment processes be used better in teaching programs?
2. Top-down innovations like CBT have disempowered teachers/trainers because individuals are usually preoccupied with coming to terms with administrative changes. Links between the innovation and the teaching and learning process are often lost. How can this disempowerment be avoided?
3. A new model for top-down innovation, that fosters high levels of negotiation and discussion between all stakeholders in the VET sector, should to be encouraged. What needs to be done to encourage such a process?

Erica Smith

'Making a difference? How competency-based training has changed teaching & learning'

Background

This was an ANTARAC-funded study which aimed to discover the impact of CBT and RPL (recognition of prior learning) on teaching and learning in VET. We quickly found that our methodology (case studies of courses within providers, interviews with teachers and trainers and submissions to the project web site) did not capture enough evidence about RPL to make firm conclusions about RPL, although some anecdotal evidence was gathered suggesting that RPL presented some difficulties in teaching and learning. A full study of the impact of RPL on teaching and learning has yet to be undertaken (and is badly overdue).

The field research for the project was carried out in late 1996.

Key findings

The project confirmed our earlier findings that implementation of CBT varied across provider types, industry area (field of study), course AQF level and type of student group. Certain features such as self-pacing were generally found to be inappropriate for certain student groups such as Non-English speaking background (NESB) students, Aboriginal students, and young people.

Teachers had usually managed to adapt their methods to make CBT 'work' for them and their students, although some problems remained. The problems with which teachers were grappling included modularisation, lack of content, perceived minimal nature of standards and confusion between competency standards and module learning outcomes. The major outstanding difficulty was assessment, with a number of features of CBT assessment posing perhaps insoluble problems. In some cases teachers had barely changed their practices and were ignoring CBT hoping, perhaps, that it would go away.

Some providers (eg enterprises and some private providers) had experienced less difficulty with CBT than others but this was not necessarily a good thing, as in some (although not in all) cases these providers seemed unaware of some of the issues.

Teachers were often ahead of their institutions in the implementation of CBT. For instance, institutional recording systems could not cope with multiple attempts at modules nor with students who studied across semester boundaries. Teachers trying to do 'the right thing' found this very frustrating.
The project identified a number of implications: for providers, curriculum developers, teachers & trainers, students & trainees; staff development personnel; and policy-makers.

A major finding was that it was almost impossible to judge the impact of CBT in terms of outcomes because, firstly, no evaluation systems had been set up at the time of CBT's implementation; and, secondly, the pass-fail nature of much CBT assessment means that student outcomes cannot be compared with pre-CBT outcomes. Some teachers felt that student standards were much lower; others that there were some improvements. Students' own opinions could rarely be sought as few students in the VET courses studied had been students in pre-CBT days.

Implications for teachers and trainers

The research showed that teachers and trainers were at differing stages of coping with CBT; some still felt they were not performing well whilst others had moved beyond anxiety over their own performance to focus their attention on student outcomes. Almost all agreed that their role had changed, and this was particularly so where self-pacing was used. Teachers and trainers were now using a variety of skills as well as up-front teaching. Specifically some changes were:

- An equalisation of the relationship between teacher and student
- Loss in the self-paced situation of personal contact with students and groups of students
- Becoming more aware of the needs of individual students
- Changing work organisation – more team-work and, in some States, the introduction of new lower-level teaching positions
- An increase in administrative duties
- Tailoring learning materials for local industry
- Writing learning guides to augment CBT modules which were generally seen as 'thin'.

It was clear that self-pacing posed additional special challenges and these were discussed in detail in the report.

Implications for policy-makers

While the implementation of CBT has been a long process, it has been experienced by individual teachers as over-hasty, because in their own teaching areas they were frequently asked to adopt CBT curricula at short notice and with insufficient resources. This is an important point in understanding the impact of CBT.

The report suggested three major areas for attention.

1. Appropriate recognition should be paid to the diversity of CBT practices and to an evaluation of the success of certain features. Non-graded assessment and RPL should have less emphasis and they are areas which, generally are not working.
2. Further development of policy needs to be undertaken especially relating to the role of teachers. Attention should also be paid to the changing needs of students especially in the self-paced environment

3. Difficulties relating to the introduction of Training Packages were foreshadowed and some suggestions made to meet some of the envisaged problems.

Detailed implications of the report's findings for providers and staff developers were contained in the report.

3 key issues

I have picked three issues which, three years later are, in my view, still unresolved.

1. Many teachers work thoughtfully with CBT to make it work for themselves, their students, and the potential employers of their students. How could the system and institutes better acknowledge their efforts and skills?

2. Three features of CBT need further research: assessment, RPL and self-pacing. What sort of research needs to be done in these areas?

3. Student views of CBT and student outcomes have not been adequately researched and, indeed, are difficult to research. (Surveys of satisfaction with VET do not address satisfaction with CBT as a teaching-learning method). What do we know about what students think of the CBT approach they have experienced? What do we need to know about the outcomes they have achieved which goes beyond module completion pass rates and grades?

Andrea Bateman

'Assessing in a competency-based training format'

Background to the research

While much has been written on the theory, policy and practice of competency-based assessment, very little empirical research on these issues can be found despite the wide scale implementation of competency-based assessment in Australia, New Zealand, the United Kingdom and Germany. To date, there has been no Australian empirical research into the factors that may influence the reliability and validity of assessment outcomes across different contexts (eg. location, competency domains). International comparative studies tend to classify assessment methods as either performance based, or objective testing techniques. Such classifications are appropriate within a competency-based assessment system, as the adoption of both forms of assessment helps to ensure that assessments measure both the underpinning knowledge and understanding as well as the skills required for competent performance in the workplace. Consequently, the project addressed the validity and reliability of these two major forms of assessment and examined their relationship to competency-based assessment in vocational education and training contexts.

The paper draws upon a number of lessons that can be learnt from the substantial body of national and international literature which have reported on the use and evaluation of both objective testing methods (such as paper and pencil tests) and more recently, performance assessment methods.

Key findings in general

- Validity of an assessment refers to *use* and *interpretation* of the *evidence* collected, as opposed to the assessment method or task. It is not simply a property of the assessment task. An assessment task that is highly valid for one use or context, may be invalid for another.

- There are a number of different types of validity including: face, content, construct, criterion (concurrent and predictive) and consequential. Each type needs to be considered when either designing assessment tasks and/or interpreting assessment outcomes for a particular purpose.

- Validity is largely determined through inferences of both the task developers and users.
- An essential component of the validity of assessments is the assessor's intention. Assessors should be very clear about their intentions when assessing candidates against competency standards, and should identify the boundaries and

BEST COPY AVAILABLE

limitations of the interpretations they make of assessments for a particular purpose and context.

- Validity of workplace assessments are often defended on the grounds of the authentic nature of the assessments. Although this provides evidence of face validity, further evidence of content, criterion, construct and consequential validity is needed before the assessment can be said to be valid.

- The reliability of an assessment is an estimate of how *accurate* or *precise* the task is as a measurement instrument. Reliability is concerned with how much error is included in the evidence.

- There are common sources of error associated with both objective tests and performance assessment. These are associated with the:

  - method of gathering evidence (ie the level of precision of the assessment task and the degree of standardization of the administration and scoring procedures) and
  - characteristics of the candidate (eg fatigue if a long test).

- In performance assessment, there are additional sources of error:

  - characteristics of the assessor (eg preconceived expectations of the competency level of the candidate)
  - context of the assessment (eg location) and the range and complexity of the task(s) (eg the level of contextualisation of the task).

- Each of the above factors need to be controlled throughout the assessment in order to improve reliability. Assessment procedures need to be developed to minimise the error in the evidence collected and interpreted by assessors. Establishing clear task specifications, including evidence to be collected and decision making rules, will increase reliability.

- *Evidence* is crucial in establishing reliability and validity of assessments. The methods used to collect the evidence will impact on the reliability, whilst the way in which assessors use and interpret the evidence collected will impact on the validity of the assessment. As reliability creates a foundation for validity, an assessment should aim to reduce the error or 'noise' in the evidence collected or used.

Validation of an assessment process should therefore address the various forms of reliability and validity. It will require the assessment task developers and users (ie assessors) to make an holistic judgement as to whether this evidence supports the intended use and interpretation of assessment evidence for the specified purpose(s). The intended use, context and limitations of the assessment task needs to be reported to potential users. Ultimately, the validation of an assessment requires evidence of

task development, clear and concise assessment criteria against the competency standards, appropriate task administration procedures, adequate scoring/decision making rules and recording procedures.

Implications for role of teachers and trainers

1. If teachers and trainers are to be responsible for task development then they require specialised training in criterion referenced assessment task development, measurement and moderation. Neither pre-service teaching programs nor the Certificate IV in Assessment and Workplace Training provide sufficient opportunities to acquire such specialised competencies.

2. Task developers should take responsibility for building in sufficient safeguards into the administration and interpretation procedures that accompany assessment tasks so that the users can be confident of these properties of the assessment.

Implications for policy and provision

1. The role of the task developers needs to be considered as distinct from that of the assessor. They may not be one of the same.

2. Training Package developers should give greater consideration to the competencies required of assessment task developers, as opposed to merely assessors, when developing the Assessment Guidelines (in the endorsed component) and the assessment materials (in the non-endorsed component).

3. Consideration should be given to the review of the relevant competencies in the *Training Package for Assessment and Workplace Training*. The units in Certificate IV in Assessment and Workplace Training do not adequately address the knowledge and skills required for collecting and critiquing evidence of various forms of validity and reliability. The two units within the Diploma of Training and Assessment Systems need to be reviewed and modified in light of the findings.

4. Greater attention needs to be given to establishing quality assurance mechanisms within the assessment system (such as moderation) to support assessors in promoting the validity and reliability of assessment tasks.

3 key issues

1. Need for specialised training in designing, developing and critiquing assessment tasks and procedures. The two assessment units of the Diploma in Training and Assessment Systems (tasks and procedures) may need to be reviewed and modified. This may be in terms of adequate documentation of the required level of knowledge and understanding required to collect and interpret evidence of various types of validity and reliability beyond the current rhetoric used in the

Australian VET sector. What sorts of things really need to be documented to improve the validity and reliability of assessments?

2. Concerns with establishing sufficient evidence of predictive validity (in terms of transferability of competencies to new or similar situations outside the assessment event) with the use of highly contextualised performance based assessment tasks. Hence, how can the conflicting needs of enterprises to that of the Australian Recognition Framework (ARF) be overcome?

3. Implications for the competencies required by Training Package developers, in particular those responsible for developing the non-endorsed assessment materials. What constitute the criteria for exemplar assessment tasks and procedures?

Barbara Bloch

'Not just falling over the line? A snap shot of competency based assessment'

Background to the research

The original question for this research was to ascertain in which ways competency-based assessment (CBA) had contributed to VET in Australia. However, this proved too broad and required a more specific focus. Therefore the aim of the evaluation became to examine the needs of users of CBA in order to discover whether or not these needs were being met through their involvement with it. 'Users' in this research included teachers, trainers and assessors from both public and private training organisations (RTOs), ITABs, professional associations, unions and workplaces; with a particular focus on the horticulture, agriculture, child care, aged care, domestic and commercial construction industries.

The evaluation was framed on the premise that the implementation of the National Training Framework (including CBA) continues to evolve. The view of the researchers was that, in order to answer the research question, it was necessary to adopt a definition of CBA practices based upon a wider interpretation than nationally-endorsed industry competency standards. Under this definition, competency assessment may be based on industry standards, competency-based curriculum outcomes or enterprise standards.

Key findings in general

Four key issues emerged on analysis of the data:

1. Grading

In summary, users identified the need to develop strategies to bridge the gap between competence and excellence. Many learners and teachers/trainers saw CBA as *not* recognising additional effort, as a disincentive to learning. Employers said that grading provided them with a way to define strengths and weaknesses of their employees and prospective employees.

2. Skills and knowledge

Strong concern was expressed in the evaluation about the need for CBA (and the standards) to be inclusive of skills, underpinning knowledge, attitudes and ethics. Conversely, there was a concern that competency standards, particularly at the lower AQF levels, do not include sufficient knowledge and theory.

3. Quality

The term 'quality' is used here to discuss processes and outcomes of CBA that were perceived to be beneficial either for an individual, an organisation or an industry as a whole. These included:

- ensuring that CBA systems meet user needs
- using qualified assessors
- getting the paperwork right
- ensuring the quality of competency standards

Respondents to the evaluation identified CBA as a factor contributing to:

- improving work processes/service/products
- expanding the skills of learners/employees
- maintaining quality work procedures
- maintaining industry and workplace standards
- attainment of national accreditation of community services organisations
- improved occupational health and safety (OH&S)

4. Resources

Resources (defined as time, money, people and assessment materials) all involved a degree of flexibility for CBA to succeed. Most employers and industry bodies were adamant that few workplaces could afford to take people out of their 'real jobs' to assess them; it had to be integrated into normal work practices and minimally intrusive.

Funding CBA was a concern for most users, RTOs and employers. New approaches to assessing, development of resources and training assessors were not often supported by increased funding.

Implications for teachers and trainers

Respondents identified establishment of training and assessment partnerships between industry and RTOs as being very important. Those who had already developed successful partnerships suggested that their CBA practice had improved because both parties were aware of industry realities impacting on assessment.

From the RTO/teacher/trainer perspective, the evaluation revealed that those who were able to use existing resources in a more flexible way were capturing more of the VET market. This was particularly evident among private RTOs and segments of TAFE who had successfully adapted existing systems and resources to meet the needs of their market.

Implications for policy and provision

All of the issues raised above have policy implications. Some are being taken up at a policy/implementation level for example:

- a review of competency standards for their value and relevance to industry and as a basis for learning / training, through ANTA's current review of Training Packages

- a creative, national marketing / communication strategy aimed at promoting the benefits of VET (and thus CBA) to users and potential users – for example employers, employees, schools and the wider community.

Considering the evidence from this and other research, policy-makers need to consider strategies for assuring the quality of assessment and dealing with the issue of grading, within a competency-based assessment system.

3 key issues

- What kinds of quality assurance processes are able to be established within a devolved, and increasingly cross-sectoral, VET system to ensure the national assessment principles are able to be implemented, given cost and other restraints?

- From your experience, has CBA had the effect of reducing the underpinning knowledge being assessed, and thus also learnt? Is CBT/CBA producing a 'dumbing down' of the Australian workforce?

- Is ungraded assessment having an effect on the motivation of learners and trainers, or is this from a VET institutional perspective, rather than from the perspective of industry?

SOME OTHER RESEARCH AND REPORTS ON COMPETENCY-BASED TRAINING

ANTA 1998, Updated guidelines for Training Package developers: Australia's National Training Framework, ANTA, Melbourne

This document is essential to understanding the framework which underpins the implementation of CBT in Australia. It provides the major guidelines for the endorsed and non-endorsed components of Training Packages. In so doing it spells out what is meant by competency and competency standards in the Australian environment.

Laurie Field 1990 Skilling Australia: A handbook for trainers and TAFE teachers, Longman Australia, Melbourne

This book provides practical information on how to identify skills required for certain jobs, and structuring modular off- and on-the-job training and assessment programs. It also provides information on the industrial and economic contexts within which Australian training reforms like CBT evolved.

Allen Consulting Group 1994, Successful reform: Competitive skills for Australians and Australian enterprises, ANTA, Brisbane

This review provided a formative evaluation of the implementation of Australian training reforms including nationally-endorsed industry competency standards. Critical of the prescription of industry competency standards, it recommended the implementation of national competency frameworks. These frameworks were to provide national competence benchmarks, which would allow businesses and industries to be more flexible to interpret standards according to their own contexts.

The Allen review also argued that one way to get enterprises to participate in the reforms, was to increase their role in making decisions about which provided would be funded to provide the off-the-job training components of apprenticeships or traineeships. This concept was accepted and in 1998 USER CHOICE was implemented. This is the funding mechanism for all new apprenticeships.

Chant Link & Associates 1992, A report into the perceptions of TAFE teachers with respect to their current and future roles, Chant Link & Associates, Hawthorn, Victoria

This report provides information on the early implementation of CBT in Victorian TAFE Colleges which showed that teachers believed that they had generally not been adequately prepared to implement CBT in their classrooms. In addition teachers believed that not enough thought had gone into making sure that CBT approaches were equally suitable for practical skills courses and for subjects in the humanities, business, electronics and the creative arts. They reported benefits of the changes in terms of cost efficiencies for the state, relevance to industry and student needs rather than in terms of more effective teaching and learning, or better rewards for teachers.

Stevenson J 1992, 'Policies and practices in vocational education and training in Australia' What future for technical and vocational education and training? International conference, Melbourne, 14-18, December, vol. 1 pp.213-224, NCVER, Adelaide

This paper provides a critique of the economic and pedagogical assumptions which underlie the national policies for skill formation. It explores in depth the question of whether the CBT approach to teaching and learning will secure international competitiveness and a skilled and adaptable workforce. The paper concludes that the future of technical and vocational education depends on more open debate.

Harris R, Guthrie H, Hobart B, & Lundberg D 1995, Competency-based education and training: Between a rock and a whirlpool, NCVER, Adelaide

This book provides a comprehensive account of training reforms in Australia and overseas. It examines the evolution of competency-based education and training (CBE/T) movement. It considers the major issues relating to the concept of competency and to its implementation in the Australian setting. It also provides guidelines into the practical application of CBE/T.

Lundberg D 1995, A fair choice: Post-compulsory education structures and networks, NCVER, Adelaide

This book provides an in-depth account of the development and implementation of Australian training reforms including those associated with CBT. It is especially concerned with the choices that are available to students who wish to move from school and to TAFE or higher education or between the various sectors. It advocates a more open approach to these structural arrangements.

Harris R 1996, Getting to grips with implementing CBT, NCVER, Adelaide

This book provides an easy to read and concise explanation of CBT and the various ways in which it can been implemented. Written for the general reader it aims to inform those who are wondering about the implication CBT has for their practice or their organisations. It provides flow charts which represent a pictorial map of the different steps that have to be taken to implement a CBT approach and then provides an in-depth explanation of each of the steps.

Lundberg D 1996, Steering through rapids: The impact of the training reform agenda on TAFE managers, NCVER, Adelaide

This book provides another in-depth examination of the implementation of training reforms in Australia including industry-driven competency-based training and assessment. It bases its discussion on findings from a survey of TAFE directors, campus managers and heads of school in TAFE colleges or institutes in all states and territories. The findings showed that the implementation of competency-based training was progressing slowly, and that inadequate staff development, and ungraded competency-based assessments being major constraints. However the findings also showed that the senior and middle managers were approaching the challenges of training reform with optimism and courage. The report urges policy makers to take notice of the constructive criticisms provided by these administrators.

Smith E 1997, 'Assessment practices in vocational education and training in Australia' Australian vocational education review, vol 4, no 1, p24-37

This paper reports on a study that examined the assessment of programs which were being offered in CBT formats. It reports findings that showed that assessment remains the major challenge in CBT implementation and the one which caused the most difficulty for students and teachers. It especially considers how implementation of processes for assessment on demand and assessment in the workplace, which were considered to be vital under a CBT system, were being constrained by access to workplaces and to resources by training providers and students.

Smith E & Keating J 1997, Making sense of training reform and competency-based training, Social Science Press, Wentworth, NSW

Written as a text-book for teachers this book describes the major structural features of the Australian vocational education and training system, and the policies which have driven training reform. It provides a critical explanation of training reform and competency-based training and examines the quality of their implementation. In addition it describes what the changes have meant for the professional development of teachers and workplace trainers.

Smith E, Lowrie T, Hill D, Bush T & Lobegeier J 1997, Making a difference? How competency-based training has changed teaching and learning, Charles Sturt University, Wagga, NSW

This report provides findings of a study on the effects CBT and RPL on teaching and learning in the VET sector. It also provides information on the changing role of VET teachers.

The findings show that CBT has had a major impact on VET practice across Australia. Practitioners had recognised the fact that they were in a transition period from previous practice to appropriate CBT practice. CBT had also involved a shift in the way practitioners interacted with students and made decisions about their relationships with other staff, and industry at large.

The report also describes the various strategies teachers have employed to incorporate CBT approaches into their training and assessment practice. The researchers concluded that teachers had in the main adapted to CBT in a positive way and were finding innovative ways to adapt it to their situations.

Thomson P, Mathers R and Quirk R 1996, The Grade Debate: Should we grade competency-based assessment, NCVER, Adelaide

This study investigated the extent of grading in CBT in public and private providers in the various Australian States and Territories, and within workplaces. Arguments for and against the implementation of a graded system within CBT are also examined. The findings of the study showed that although there was enthusiasm for the concept among providers and employers, there was lack of agreement on whether graded assessment conformed with the national framework. The researchers recommended a flexible system of competency-based assessment where the option for grading rested with local providers. However they recognised that much more research needed to be done to ascertain the usefulness of grading in the workplace.

Cornford I 1997, 'Competency-based training: An assessment of its strengths and weakness by NSW vocational teachers' , Australian and New Zealand Journal of Vocational Education Research, vol 5, no. 1, May pp.53-77

In this paper Cornford reports on a survey of the opinions of teachers who had taught or are currently teaching CBT modules in the traditional trades or in emerging occupations. The findings show that teachers are concerned with the lack of resources and information to help them with the effective implementation of competency-based training and assessment. The lack of time for students to practice skills and review underpinning knowledge before assessments were taken were other concerns experienced by teachers.

James P and Coleman J 1998, But will the teacher like it? Cultures of competency-based training and the development of proficiency', Journal of Vocational Education and Training, vol 50, no. 3, pp.403-424

This paper reports on a study which examined the adaptation to CBT learning processes (ie self-paced learning) by two sets of students. In this study the researchers observed students in practical training sessions and discovered important differences between the two groups. Students in one group were more interested in achieving good grades than in developing knowledge and

understanding. Although they had adjusted to the self-paced mode of learning their view of individual work involved frequent consultation with their peers, and requests for teacher support. Students in the other group were less skilled in using the self-paced method but they too aspired to good grades but in their case they wanted grades with minimum effort. Even in assessment tasks when students had been asked to work individually and not ask for assistance they continued to share solutions and demand teacher support. This led James and Coleman to conclude that CBT had not developed students into independent learners but it had made them become more dependent.